Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1.   (Currently Amended) A distortion compensator comprising:

an ~~amplitude~~ amplitude-phase control~~ler~~ ~~section~~ for controlling an amplitude and phase of a~~n~~ input transmission base-band signal to form a controlled signal;

a~~n~~ quadrature modulat~~oring~~ ~~section~~ for orthogonally modulating the controlled signal received from ~~an output of the amplitude~~ the amplitude-phase control~~ler~~ ~~section~~;

a power amplifier for amplifying the quadrature modulated signal received from ~~an output of~~ the quadrature modulat~~oring~~ ~~section~~;

a directional coupler for distributing the amplified signal received from the power amplifier as a feedback signal ~~an output of the power amplifier~~;

a frequency converter for frequency-converting the feedback signal received from ~~one of outputs of~~ the directional coupler;

a Fourier transform~~er~~ ~~section~~ for Fourier-transforming ~~an output of~~ the frequency- converted signal into a frequency spectrum signal ~~converter~~;

an out-band power ~~computing section~~ calculator for computing an out-band power outside of a transmission band from the frequency spectrum signal, the out-band power corresponding to a distortion component of the power amplifier ~~an output of the Fourier transform section~~;

an amplitude ~~computing section~~calculator for computing an amplitude value of the input transmission base-band signal;

~~a~~ fixed-coefficient ~~storing section~~storage for storing ~~a~~ characteristics reverse to a pre-measured input/output characteristic of the power amplifier, one of the stored characteristics selected based on the amplitude value;

an error coefficient ~~computing section~~calculator for computing an error characteristic, the error characteristic computed based on the out-band power from the out-band power calculator and the selected ~~from a stored~~ characteristic ~~in~~ from the fixed coefficient storage~~storing section, on the basis of an output of the out-band power measuring section~~; and

an ~~amplitude~~ amplitude-phase ~~change amount computing section~~change calculator for computing a~~n amplitude~~ change ~~amount of amplitude~~ and a phase change based on the selected characteristic from the fixed-coefficient storage and the error characteristic from the error coefficient calculator~~on the basis of outputs of the fixed coefficient storing section and the error coefficient computing section~~, and instructing the amplitude-phase control~~ler~~ ~~section~~ to carry out the control ~~on the basis of~~based on the amplitude change ~~amount of amplitude~~ and the phase change.

2.   (Currently Amended) A distortion compensator comprising:

a variable attenuator for controlling an amplitude of a~~n~~ input transmission RF signal to form an amplitude controlled signal;

a variable phase unit for controlling a phase ~~on an output~~ of the amplitude controlled signal received from the variable attenuator to form a controlled signal;

a power amplifier for amplifying ~~an output of~~ the controlled signal received from the variable phase unit;

a directional coupler for distributing the amplified signal received from ~~an output of~~ the power amplifier as a feedback signal;

a frequency converter for frequency-converting the feedback signal received from ~~one of outputs of~~ the directional coupler;

a Fourier transformer ~~section~~ for Fourier-transforming ~~an output of~~ the frequency ~~converter~~ converted signal into a frequency spectrum signal;

an out-band power calculator ~~computing section~~ for computing an out-band power outside of a transmission band from the frequency spectrum signal, the out-band power corresponding to a distortion component of the power amplifier ~~from an output of the Fourier transform section~~;

an envelope ~~detecting~~ detector ~~section~~ for outputting an amplitude value of an envelope ~~on~~ of the input transmission RF signal;

[[a]]fixed coefficient ~~storing~~ storage ~~section~~ for storing [[a]]characteristics reverse to a pre-measured input/output characteristic of the power amplifier, one of the stored characteristics selected based on the amplitude value;

an error coefficient calculator ~~computing section~~ for computing an error characteristic ~~of from a stored~~, the error characteristic computed based on the out-band power from the out-band power calculator and the selected characteristic ~~in~~ from the fixed coefficient storage ~~storing section, on the basis of an output of the out-band power measuring section~~; and

an amplitude—~phase change ~~amount computing section~~ calculator for computing a~~n~~ amplitude change ~~amount of amplitude~~ and a phase change based on the selected characteristic from the fixed-coefficient storage and the error characteristic from the error coefficient calculator~~on the basis of outputs of the fixed coefficient storing section and the error coefficient computing section~~, and instructing the variable attenuator and the variable phase unit to carry out the control based on ~~the basis of~~ the respective amplitude change ~~amount of amplitude~~ and the phase change.

3.   (Currently Amended) A distortion compensator according to claim 1, wherein the error coefficient calculator ~~computing section is to~~ computes a polynomial having, as a variable, ~~an~~ the amplitude value of [[a]]the input transmission base-band signal ~~or transmission RF signal~~, to update a coefficient of the polynomial from the out-band power.

4.   (Currently Amended) A distortion compensator according to claim 1, wherein the out-band power calculator ~~computing section has~~ includes a power computing section for computing an adjacent channel leak power ratio and a determining section for determining whether the adjacent channel leak power ratio is less than or equal to ~~or smaller than~~ a predetermined value ~~or not~~, to instruct the power amplifier to halt operation when the adjacent channel leak power ratio is greater than the predetermined value.

5.   (New) A distortion compensator according to claim 2, wherein the error coefficient calculator computes a polynomial having, as a variable, the amplitude value of the input transmission RF signal, to update a coefficient of the polynomial from the out-band power.

6. (New) A distortion compensator according to claim 2, wherein the out-band power calculator includes a power computing section for computing an adjacent channel leak power ratio and a determining section for determining whether the adjacent channel leak power ratio is less than or equal to a predetermined value, to instruct the power amplifier to halt operation when the adjacent channel leak power ratio is greater than the predetermined value.